STUDYING TENTS—Setting up a lightweight tent, in this case in the classroom, is a first step in studying camping techniques for vocational or recreational purposes. (Photo by Thomas Marron, Coventry, Rhode Island)

YELLING TREES—Students enrolled in natural resources learn how to fell trees. These students have a forestry silviculturist on their school. (Photo from Max Ambertau, Montana State University)

STUDYING WATER—The area's natural resources include maintaining and improving water quality. Here technicians conduct tests at a tree farm in Virginia. (Photo from Rodney Tulloch, University of Kentucky, and courtesy of the Veyregrace Company)

USING INCREMENT BORES—Glen Kite of the U.S. Forest Service demonstrates the use of an increment borer in determining the age of a tree in Lee Willard, agriculture teacher at McCook County (South Dakota) High School. (Photo from Rodney Tulloch, University of Kentucky, and by Ladd and Ladd Studio, Whitley City, Kentucky)

DITCHING—Improving and maintaining the soil is an integral part of the instruction in natural resources. Here a student is observed operating on the E. V. King Ranch, Silverton, Texas. (Photo from Rodney Tulloch, University of Kentucky, and U.S. Department of Agriculture)

Theme—UTILIZING RESOURCES IN TEACHING
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THEME—UTILIZING RESOURCES IN TEACHING

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Send articles and pictures to the Editor or to the appropriate Special Editor.

COVER PHOTO: Instruction involves using community resources at the North Shelby (Misou) High School. Vocational Agriculture Department. Here students are studying how to paint a room. (Photograph by J. A. Butler, Michigan State Department of Education)

COMMUNITY RESOURCES CAN BE TEACHER HELPERS

Vocational agriculture teachers in the 70s have more responsibilities and greater challenges than at any time in the history of educational agriculture. Teachers are expected to develop new programs, to plan a variety of learning activities, and to use innovative teaching techniques to serve students with diversified backgrounds and interests. To carry out these responsibilities, the vocational agriculture teacher needs help. Help can be found in every community in the form of community resources. The teacher must be creative to identify and activate community resources for teaching.

Types of Community Resources

In the 70s, one of the most important resources available is the community. This is the first time I've been asked this. It is the response frequently received by vocational agriculture teachers. The community is the first resource that they recognize as important. People in the community can provide expertise in specialized areas to complement that of the teacher. They can be utilized at the place of one going.

(Continued on next page)
Editorial . . .

4. Give demonstrations to fellow class members in the classroom.
5. Give demonstrations of recommended practices on the home farm or place of business to convince people of the value of adopting recommended practices.
6. Identify other resource persons and places where field trips can be taken.
7. Sponsor educational activities through the FFA or the YPA.
8. Serve as members of course committees for what classes to help determine the content of the course and help secure enrollment.
9. Be their own teacher through independent learning with or without self-instructional learning materials. The in-

Guest Editorial . . . COMMUNITY RESOURCES CAN BE TEACHER HELPERS.

(Williams—from previous page)

occupational activity or transported to other learning en-
vironments. Here are two examples of learning activities that utilize human community resources:
1. Have a cattle buyer explain the grades of slaughter
cattle during a field trip to a local livestock auction.
2. Schedule some older students to explain the pro-
duction practices they use in their supervised farm-
ing programs during a tour of their farms by FFA greenhorns.

Physical Resources. A vocational agriculture department with the most modern facilities, the latest equipment, and the most up-to-date references can never duplicate the real experiences offered by farms and agricultural businesses and agencies. Community physical resources provide sites for supervised occupational experience, field trips, and independent study. Agricultural businesses and agencies as well as farms and ranches in the community are potential cooperative occupational experience training stations. These resources are also sources of specimens, products, and materials that can be brought into the classroom or laboratory to provide “chutes” for the instruction.

The following are examples of learning activities that utilize community physical resources:

1. Develop an experience plan and place a student in an implement dealership for occupational experience.
2. Have students borrow products and materials (local agribusinesses and set up a display to promote a prop for classroom instruction.

Activating Community Resources

An advisory committee (another way to utilize com-
munity human resources) can help the teacher identify and contact potential resource persons. These persons may be local business owners, teachers in other specialties, or others who have a special interest in the subject. The teacher should not hesitate to ask for their help. In fact, the teacher's role is to help the student make the best use of the resources available. By involving the community, the teacher can provide a more realistic and meaningful learning experience for the student.

Today vocational agriculture teachers are challenged to consider community resources as an important part of the teaching process. They must find ways to integrate these resources into their curriculum.

1. A study was conducted to determine the use of vocational teachers make of resource personnel in their classrooms. The results were encouraging, but indicated areas of needed improvement. Eight out of ten teachers used guest speakers in their classrooms for an average of 4.3 times.

2. Teachers should be encouraged to develop and use more frequent opportunities for guest speakers, field trips, demonstrations, and other resource-person activities. By involving the community, the teacher can provide a more realistic and meaningful learning experience for the student.

3. Intervise education meetings stressing proper utilization of resources. Meetings should be conducted in all regions of the state. Materials were developed so that meetings held concurrently covered the same aspects. A planning committee was held by the combined staff to coordinate these efforts.

4. A statewide directory of resource people was developed and distributed to all departments. Personnel from 15 federal and state agencies were listed, along with their area(s) of expertise and recommended practices in securing these services. A coordinating organization, the Kentucky Development Committee, was instrumental in securing listings from the various member agencies. Additional listings on a district basis were made of resource people who were well received by the teachers. The presentations were rated good to very good. By the end of the year, two-thirds of the respondents had improved their local files of resource people, while nearly one-half indicated better management and follow-up techniques had been utilized.

A Needed Emphasis

Today's teacher of Vocational Agriculture is faced with the demanding task of preparing students to be successful in the world of work. The needs of society are constantly changing, and the teacher must be prepared to adapt to these changes.

To meet these challenges, the teacher must be knowledgeable about the resources available in the community and be able to utilize them effectively.

1. Develop an experience plan and place a student in an implement dealership for occupational experience.
2. Have students borrow products and materials (local agribusinesses and set up a display to promote a prop for classroom instruction.

Keeping Adequate Records

After locating potential assistance, an important task is to catalog the individuals so that they may be readily identified when needed. A card file or notebook, arranged alphabetically by type of individual, is helpful. To keep this information at one's fingertips, notations can be made on the form which will guide future utilization of the person.

Teachers organized on a district or regional basis can

Resource Persons -- An Opportunity and Challenge

Maynard J. Iserson
Teacher Education
University of Kentucky

What can a Vocational Agriculture teacher do to improve the impact of his teaching in highly technical areas? Who is available to provide assistance in teaching new agricultural technology? What use is presently being made of specialists?

These questions sparked the combined staff in Agricultural Education to initiate the following series of activities aimed at improving the utilization of agricultural resource personnel in classrooms.

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SELECTING TEACHING METHODS AND MATERIALS

Arthur L. Birney
Teacher Education
Cornell University

Optimal utilitation of teaching resources involves two steps. First, the selection of the best teaching method(s) and material(s) for the situation at hand. Next, and just as important, is the selection of methods and materials that are well suited to the needs of the students. To that end, the following guidelines are presented.

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(Concluded on next page)
Utilizing New Audiovisual Resources

Glen Miller
Vocational Agriculture Instructor
Mary, Arizona

Today, we agricultural teachers have more resources available to us than ever before. Among some of the most innovative are the new audiovisual resources.

This year at Mayer High School we experimented with two new audiovisual aids in the course of instruction in small gasoline engines. We have been using a theory trainer purchased from Techni-Systems, Inc. The trainer contains all the basic tools necessary to assemble, disassemble, and reassemble a modified 3 HP Briggs and Stratton engine. Additional equipment is provided in a rolling tool kit and a 20 HP engine.

It had become apparent, due to the necessity of students to repeat, that some supplement to live demonstrations would be helpful. Dr. Clinton O. Jacobs, Professor of Agricultural Education from the University of Arizona, developed an experimental set of film tapes to help vitalize the student activity which had been written. It was found that these film tapes were of a new breed. These cases are upon the experimental sound tract. They are matched with the resource units and student activity materials currently available from Techni-Systems, Inc. Each film relates to a specific step in the assembly, disassembly, and reassembly of the Briggs and Stratton engine.

These films provided the opportunity for students to review a technical procedure several times if necessary. They also provided a rapidly progressing demonstration that can be pointed out to steps in operation but also conveyed concepts clearly. They provided a focus on the demonstration which was not possible with live demonstrations.

The use of cassette players provided us with a time advantage in short-period situations and they enabled the student who was absent to review missed steps and demonstrations.

We also spent time experimenting with our video tape system in our small gasoline engine unit. To further emphasize important points in operation of various test equipment, I pre-recorded demonstrations using students. Students who observed other students performed their own tasks with increased motivation. Video taping the entire class gave students a feeling of accomplishment and pride in a job well done. I saved these video tapes for presentation at open house and school board meetings. The public relations results were very good.

I feel that when compared on the basis of investment to educational value, the film cassette is the most promising system. For a comparatively small investment, extremely high quality films can be produced.

The limits of the subject matter are fewer with films than with video tapes. Video tape equipment is too light sensitive for recording arc welding demonstrations.

The film cassette is compact in size and stores easily. The reproduction cost of these films is competitive with film strips and slides.

In summary, both media are excellent audiovisual aids to instruction. Each system is capable of improving the instructional process for motor skill development.
Planning is a frequent topic of conversation at meetings of educators, but many fail to do nearly as much about it as they should. Many short-comings in our program of vocational education can be traced directly to poor planning or no planning.

J. C. Abberton
Teacher Education, Louisiana

A Little Forethought Is Needed

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J. C. Abberton
Teacher Education, Louisiana

Using the Total Agricultural Resources of the Community in Teaching

Harold Binkley, Teacher Education, University of Kentucky

During most of the past 50 years, teachers of agriculture have "died" their instructional programs to the home farms of their students, with a resultant waste of time, money, and effort. In recent years, teachers who have worked closely with vocational agriculture teachers have been able to develop a more effective use of the Total Agricultural Resources (TAR) of the community.

The TAR approach involves the use of all available resources of the community to support the educational program of vocational agriculture. This includes the use of the home farm, community resources, and resources available from other organizations and agencies.

For example, in a recent project, a group of students was able to use the resources of a local farm to conduct a study on the nutritional value of locally produced crops. This project not only provided valuable learning experiences for the students, but also demonstrated the potential of the TAR approach to enhance the overall quality of vocational agriculture programs.

The TAR approach is particularly useful for schools with limited access to agricultural resources. By utilizing the resources of the community, schools can provide their students with a more comprehensive and relevant education.

Future Training

Binkley

The history of vocational agriculture has been great, but how about the future? The profession of agriculture education moves to prepare people for gainful employment in occupations in the broad field of agriculture, what is the big challenge?

In the past, teachers studied the home farms of their students. These home farms were the laboratories for students to learn farming, through experience programs called farming programs. The challenge in agriculture education in the decade ahead is clear. There will be a need for specialized programs for training students in agricultural mechanics, ornamental horticulture, forestry, service and supplies, and other specialized areas. And, there will be a need for training programs which will provide instruction and supervised experience in a diversity of agricultural occupations in a community. This will be especially true in those communities where there are not enough training stations.

Three seems to be two distinct challenges: 1) How to organize and manage the total agricultural resources of the community in support of a training program in agriculture education, and 2) How to use individualized instruction to meet the diverse training needs of the students that may be provided through the total agricultural resources at the local level.

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The Course of Study and Individualized Instruction

Once the resources (training station possibilities) have been determined, the basic information needed to determine his course of study. If the training stations are diverse, the teacher will want to design his instruction to suit the range of training needs. The classroom instruction should be made up of two major parts: 1) group instruction and 2) individualized instruction. At a typical high school, the junior and senior levels the group instruction might very well include such instructional units or modules as:

1. Orientation to agricultural occupations
2. Selecting and making arrangements for experience programs in agricultural occupations
3. Clarifying one's experience programs in agricultural occupations
4. Keeping records on experience programs in agricultural occupations
5. Summarizing and evaluating experience programs in agricultural occupations
6. Organization and operation of agricultural businesses and industries
7. Agricultural mathematics
8. Economics and personal and personality development
9. Store skills
10. Salesmanship and selling

All of these components through group instruction, the teacher should be able to organize those learnings needed by most students, regardless of the types of occupational areas the student will be training in.

A part of the class time should be devoted to individual study (or individualized instruction), during which time students must study and develop the knowledge and understanding he will need to perform the jobs and carry out the responsibilities which will be his at his training station. Where does the teacher go to get help for

---Plan your work and work your plan---splashed on its bulletin board..."Prepare for the unexpected. It is bound to happen..."To the list of those standards we are concerned with planning and following through with decisions. Much of a student's progress will be based upon the work of the previous year and on the practices of others. One should consider the possible and better ways of doing things. One should be aware of his limitations and recognize that the task is large for the group and the teacher (s) to attempt to carry the ball alone. One must be able to determine and then set priorities so that the essential is left for the nonessential. The community is largely window dressing. Some responsibilities can be and should be shared with the group and the local community. It is wise for the instructor to attempt to be the "whole show." As a teacher, one has the task of developing and maintaining competency among the citizens of the community. People participate in the primary reasons for accomplishing this. This requires the sharing with others of certain privileges and responsibilities. They could be led to see that these new responsibilities are in reality opportunities for personal growth and a means of providing community service.

Atmosphere to do it all by oneself can lead to frustration. The stress and strain of constant pressures to get things done plays one of the reasons that students are not doing their full share of community activities. Tensions are created by the work load themselves and the restraints of the area are not developed as they could be. This leaves all parties shortchanged.

The Summary Challenge

Programs in agricultural education in the decades ahead must break with the past in which they were limited to the base educational level. The student must be taught to learn to organize, to capitalize, and to use the total agricultural resources of the community. The teacher of agriculture must develop the skills and understandings necessary to support his local program, and he must develop the skills in organizing and managing individualized learning experiences to meet the diverse needs of the students.

This poem summarizes the challenge:

There is still a man on every frontier. 
Let us recognize there is no virgin soil. 
For venturing, no land for pioneers.
To prove with plow or harrow. Fruit of toil
Beyond the dreams of harvesters回来。

The LIBRARY

AN AG TEACHING RESOURCE

Linda Phillips, Librarian
Agricultural Technical Institute
Wooster, Ohio

Another innovative feature of the LLRC is ATT's commitment to development educations. Students who need or want to improve their reading and study skills enroll in the Guided Studies Lab where they receive individual attention from a Guided Studies Specialist.

Finally, through its orientation and instruction in the availability and use of materials, the LLRC contributes to the beginning of the career. In two years most students will be entering the agricultural industry as technicians. They will have with them some practical information and experience and the challenge to keep current in their fields. The LLRC faculty encourages students to seek informational sources for future use, to use catalog and pamphlet mailing lists and to develop the communication skills necessary for acquiring and synthesizing new ideas.

To make the collection practical, current and broadly agricultural, materials are being added in every format. Periodicals represent a large portion of the resources. Their scope is technical, trade and general. Scientific research journals are purchased only if regular use is anticipated. This approach reflects that of the curriculum: students search for information on specific topics; they do not get involved in comprehensive, well-published research studies. While some assignments require synthesis of several sources of information to reach conclusions, the search is on the student to find the most current scientific research journals. Several periodical indexes are on hand to facilitate the subject search.

For the times when students or faculty desire further information, a listing of the Ohio Agricultural Research and Development Center Library journals is available. Their collection, located at the Research Center just across the field from ATT, is comprehensive for agricultural research. ATT current issues of magazines are arranged in the periodicals lounge according to broad subject areas-agronomy, horticulture, wood, animal science, and general. Older issues are shelved in alphabetical order and are available for reference from 1972 issues (the year the school opened). The decision must still be made as to how long they will be useful to the patron.

The book collection emphasizes technical, general and basic subjects. Active book selection is the faculty, each having a particular area of specialization.

The LLRC selection policy states that materials purchased will support the curriculum, contribute to the overall development of the person, and represent very good reading and technical levels. As the study of agriculture touches so many fields, one may expect to find books on communications, biology, botany, chemistry, business, psychology, mathematics, and economics in the agricultural technical subjects.

A relatively new approach to learning is represented by the media collection; which is rapidly growing in content and approval. In many cases the materials, such as slides and films, help students visualize concepts which they have read about or heard in class. Others, like the computer films may be used to present a lab experiment in review. Some programs give students a chance to look at weed or other plant specimens for aid in identification. Social science programs present an issue in a total package, like The Purdue Student Government and its media items on reserve, along with their books.

(Continued on page 208)
Virgil Teller's Career
Benefits Three Generations

Three generations of farm families have benefited from the knowledge and talents of Virgil Teller, Martinsville High School vocational agriculture teacher.

High school students for the last 46 years and adults in evening classes for the past 37 years have learned the latest in agriculture development and practices under Teller's guidance.

Teller retires this year at 67, two years past the standard retirement age. Yearly requests by the school board and his own enjoyment of teaching kept him in an active role in the school's ag program.

"They asked me to stay on for a third year," Teller voiced. "But I just felt that I would have to leave sometime and I finally made the decision that I had to be more active." Teller's classes over the years have mirrored the change from straight vocational education to vocational agriculture.

"Not every ag student can or wants to farm but many want to stay in an ag-related business," Teller emphasized. Under his guidance, class enrollment is 150. Not included in the total are two large adult evening classes.

He believes that for a strong program, students need an active Future Farmers of America (FFA) chapter. And the Martinville chapter and its members have received just about every state award possible as well as several national honors.

In order for the ag program to succeed he has developed: a strong supervised practice farming program, a strong FFA leadership training program, a strong adult and young farmer program, and many good community service activities.

Students currently farm 50 acres of school-owned property to gain practical knowledge. From crop money a tractor is leased and varieties of feed, fertilizers and chemicals are purchased for crop production.

Having graduated from high school in 1954 and from Purdue four years later, he taught ag for seven years at Orleans before moving to Martinsville.

Teller feels that today's students are in general not quite as conscientious but that the change simply reflects changes in the parents' and peers' attitudes.

"I don't mean this in a negative way at all," he emphasized. "I am proud of all my students and their efforts."

REACHING CAREER FINDS—Virgil Teller and his wife, Mary, have many fond teaching memories. This month's data back to almost the beginning of his teaching career when Virgil used it to make his visits to students' agriculture projects. He still rides it.

We are using single-concept, sound super 8 films at the University of Arizona to increase future teachers' vocational agriculture with agricultural me- chanical skills they will need in their profession.

These skills cover a lot of ground, ranging from how to light and adjust an electric saw to welding to finish a fence. Simple reasoning makes it necessary for the teacher to know how to demonstrate the skills if he is to be effective.

However, practicality makes it nearly impossible for vocational agriculture teachers to be able to demonstrate all these skills. And even when an instructor can give a proper demonstration of a psychomotor skill, he is limited in the number of times he can be expected to repeat it for the slower learners or the student who was absent the first time.

It seemed to me and my colleagues that the best answer was to use some form of audiovisual instruction to demonstrate these skills. Our experience has shown that students can best grasp what they can visualize.

We first filmed and injected several alternatives. The first was using slide and audiotape. While this worked well for teaching many skills, we felt that we needed some way to depict motion for demonstrating psychomotor skills. We also looked into the possibility of using commercially available movies to fill the gap. The problem there was that there weren't too many films which could be specifically tailored to the curriculum.

Our next consideration was again to using the videotape equipment that our department had acquired for use in including the performance of student teachers. We chose videotape for that purpose because we felt that the instant playback feature would be important.

However, we soon decided that videotape had several drawbacks for teaching psychomotor skills. For one, the equipment for both recording and editing was costly and difficult to use. Also, we have black-and-white equipment and we felt that color was essential for us.

Then, late in 1971, we investigated producing our own single-concept sound super 8 films. By single concept, I mean that each short film focuses on just one skill.

Before proceeding, we researched the mechanism of producing super 8 films. We wanted to learn all of the variables before committing ourselves. One of the things which kept us from investing in more extensive videotape equipment, for example, was its lack of standardization. We didn't want to buy anything which could be obsolete in a few years.

Nor did we want to invest in equipment for producing software which we couldn't share with other universities and schools.

There were no such problems apparent with super 8 film. While there are several types of projection cassette for easy-loading projectors, the same film format is standard all over the world. In fact, we learned that sound super 8 films can even be transmitted through closed-circuit television.

Encouraged and supported by Prof. Floyd McCormick, head of our department, we began experimenting with the production of single-concept films. We decided to focus on the two- year-core curriculum used by an estimated 80 percent of the Arizona high schools teaching vocational agriculture.

The College of Agriculture in cooperation with teachers in our state made that curriculum available to high schools a year earlier. The initial films that we produced were designed for eventual integration into that curriculum.

I consulted with Don Henderson, an Eastman Kodak Company sales and engineering representative, on production techniques and I relied primarily on what worked best for us. In this regard, I was often able to secure important help from various graduate students involved in the field.

The department purchased a super 8 camera, which we used for the original of the films. The film work generally is done in several stages. First, a demonstration, such as the lighting and adjusting of an oxyacetylene torch was set up and rehearsed. Then, we prepared an outline of the information that was to be put on film. (Concluded on next page)
We had the full cooperation of teachers of vocational agriculture at six Arizona high schools who were using our course materials. These teachers readily placed the students in one of their classes into three groups. There were 35 students in each cumulative grouping.

The students in the first group had their instructors’ demonstration of lighting and adjustment of the oxyacetylene torch. Group two saw the same demonstration, but they were also shown the single-concept film on the subject. The third group only saw the film.

Afterwards, Mr. Fundtser tested the skills of the students in each group. He found that those in the first and third groups were able to perform at about the same level. However, the students in the second group performed at a significantly higher skill level than all of the others when compared at the 0.05 level of confidence.

To solve the problem of having both teacher and student handle film by using a projector, we proposed the cartridge loaded film. However, when we looked into that, we decided the use of single-closed cartridge loaded could have a marked drawback. Even if a cartridge picks up some dirt and dust during operation, it’s to be expected. It’s practically— which is difficult in a closed-loop cartridge.

That led us to the use of the Kodak cassette. This combines the feature of pop-in projector loading. It’s easy accessibility of the film for preventive maintenance. Furthermore, a number of other projector manufacturers have adopted this format.

Considering a number of machines, we chose the Kodak Supermatic 60 sound projector for use primarily because it’s especially adapted to group presentation and for individual student use.

For classroom presentations, the projector is used to throw a large image on a wall screen in a darkened room.

We also use the same equipment for individualized instruction. Any student or small group can use the projector to review or make any class using the individual projector screen that provides a bright, sharp image in ordinary room light. This means students can work with the films, in a quiet room, while the rest of the class is going on.

Currently, one of my graduate students is building a special study area for in-class use. This will help with the projector, our films and other visual material for individualized or self-paced instruction.

During the spring semester of 1954, we were able to provide duplicate copies of six films and a Kodak Supercine 60 projector to students at six Arizona high schools: Charles Town, Santa Fe High School, Yuma, and Mountain View High School, St. David.

When they complete their evaluation of the film, we believe the films will speak for themselves. If our experience means anything, the films are going to find that they have saved a great deal of time, which can be applied more productively in preparing for demonstrations. Many instructors will then have applied an important Law of Learning—the Law of Practice—having seen and known how to do the operation and in the beginning.

The result, we hope, is that we will be able to provide all or many of the vocational agriculture departments in the state with films coordinated in their curricula.

(Philips—from page 205)

The L.R.G.C. Guided Studies Laboratory contains a collection of reading and study programs which range in difficulty from grade seven to advanced speed reading. The Guided Studies Laboratory is run for the interested student to identify their weaknesses, and together design an improvement plan. Some students work individually, while others may be group study on a common problem. Also available through the Lab is peer tutoring.

In summary, the L.R.G.C. is an instructional unit of the Agricultural Training Institute which helps students prepare for technical careers by providing immediate feedback in their areas of work. With the Learning Center faculty as teachers, students are exposed to various materials, methods, and practices for acquiring various skills. By studying natural resources and environmental science and technology, students are provided with the tools to make informed decisions. The program combines academic preparation with practical experience. A more comprehensive analysis and understanding of the above means that instruction must be more personalized, not packaged or programmed. The most important aspect of the program is that each student selects the amount and kind of instruction. Operating under a semester schedule, students advance rapidly to advanced classes, skip units and go back to select others as they perceive their need. Although we encourage students to follow a pattern of course development it is not required. The 9th grade boy with a home garden, the 12th grade boy and girl employed at the local nursery, the college student and the truck farmer’s daughter must be considered. This approach means that instruction must be personalized, not packaged or programmed. This program is designed for students beingcom-

The agricultural education program focuses on developing students’ skills in agronomy, horticulture, and animal sciences. The curriculum emphasizes hands-on learning through field trips and laboratory exercises. Students are encouraged to apply the concepts they learn in their everyday lives, fostering a deeper understanding of the agricultural sector. The program also includes opportunities for students to engage in research projects, which allows them to develop critical thinking and problem-solving skills. The Agronomic Education Magazine provides updates and articles on the latest developments in the field. This magazine is an excellent resource for students looking to stay informed about the latest trends and advancements in agriculture.
The Concept of Technical Education in Agriculture

Harland Hasclen
Chairman, Academic Division
University of Minnesota—Waseca

An important educational innovation has been emerging since a 1964 National Seminar on Agricultural Education at Ohio State called attention to the concept and need for the development of "adequate" technical programs to prepare students for both farm and off-farm occupations in Agriculture. The concept incorporates "why" and "how" for the purpose of preparing students to perform at mid-management, semi-professional, or part-professional competency levels. It was obvious to those who attended the seminar that modern educational goals are in a state of constant change and adjustment. The need for everyone to reach for advanced educational degrees at the B.S., M.S., or Ph.D. level of attainment was becoming less important in the minds of students as well as in those in charge of hiring qualified performing personnel.

Proponents of agricultural technical education feel that our concerns are students and not long standing doctrines and disciplines. They believe we ought to be able to recognize the need for agricultural education at every level from our secondary schools right on up through our post-secondary institutions. Agricultural educators, like their counterparts in other disciplines, have begun to realize that we can no longer tolerate any educational system that: 1) ignores the work of work 2) defines occupational studies as inferior to general studies 3) provides for only the academically endowed. Such attitudes can only lead to a vast wasteland of disadvantaged youth who are untrained and therefore unwanted. Workers hired for mid-management and semi-professional skill can be as important to business and industry as the highly trained professional who operates in high management positions.

THE AGRICULTURAL TECHNICAL COLLEGE

The University of Minnesota, recognized these emerging needs in agricultural education, and established two technical colleges for agriculture; one at Crookston and the other at Waseca, Minnesota. The coordinate campus at Waseca, Minnesota was established in 1971 as a single mission college for the purpose of preparing students for mid-management, semi-professional positions, and broad fields of agricultural education. The primary objective of the College has been to develop technical competence for employment at the end of an associate degree program of two or more, but less than four years.

It has been highly important to the success of the college that the objectives of technical education are clearly understood and communicated to students, their families, the community, and the people who support us. The college is not afraid to fund this type of education. There seems to be substantial evidence that every type of education must establish a philosophy, a goal and teaching-learning implications for its successful implementation. Instructors at UMWE were made aware of the characteristics of technical education that set it apart from whatever the teacher's background may have been. They have been constantly reminded that the formation and presentation of course material must deviate from conventional type of instruction to fit the goals and objectives of technical education.

WHAT IS AN AGRICULTURAL TECHNICIAN?

Instructors at the college are oriented to the realization that an agricultural technician is a worker located between the skilled worker and the professional in the job classification structure, in his work performance and his educational attainment. He possesses the skills and ability, working independently or with minimum supervision from a professional; to analyze and interpret information, diagnose problems, make decisions and execute practical applications of theoretical knowledge in performing specific skills in a specialized field in the production, processing, distribution or marketing of goods and services in agriculture. He must exercise cognitive skills primarily, but also must be able to supervise and perform manipulative skills.

Students in the programs for agricultural technicians have been provided for training programs according to the definition. Technical curricula must be offered in institutions which have as their objectives and legal basis the right to technical education. The immediate availability of laboratories both in broad and narrow interpretations is prerequisite for this type of education.

(Co)
Indications are that many competencies of teachers are not being developed within the university setting. Some competencies, due to their nature, must be developed on the "flying line" within the community itself.

Placing student teachers or interns in local schools and having each student teacher develop himself as a teacher with the assistance of needed competencies will be developed. In far too many instances the interns are as "isolated" in the system as the school system itself was not within the university setting; thus, they are unable to develop competencies required for intensive involvement in the community.

Many young teachers after completion of pre-service teacher education programs, enter their first teaching job assuming they have sufficient competencies to teach all tasks necessary for conducting an effective vocational agriculture program because of their experience at the university and the competencies developed in the pre-service programs actually those that were essential to our effective vocational agriculture programs. This question over the years has become increasingly more important for teachers, supervisors, and teacher educators in agriculture.

The recent increased emphasis on developing competency-based teacher education programs has altered many persons' concepts of both pre-service and in-service teacher education programs. While these competency-based models are being explored by many teacher education institutions and state departments of education, they are still considered by many to be experimental models.

Dr. Shill is Co-Director of the Mississippi Research and Curriculum Units, and Associate Professor of Elementary and Secondary Education. Dr. Handley is Director of the Bureau of Educational Research, and Associate Professor of Elementary and Secondary Education.

ADDITIONAL COMPETENCY DEVELOPMENT: A CHALLENGE FOR TEACHER EDUCATION

James F. Shill and Herbert M. Handley
Mississippi State University

The reader in interpretation of information presented on the performance level of competency development, may make adequate development was developed as follows:

1. Compliant Performance—Ability to perform in areas of performance not DEPENDENT on the assistance of others.

2. Acceptable Performance—Ability to perform in area of performance INDEPENDENT of direction or assistance of others.

3. Competent Performance—Ability to demonstrate desired task performance when provided some direction or assistance.

4. Acceptable Performance—Ability to demonstrate desired task performance when provided CONSIDERABLE direction or assistance.

5. Acceptable Performance—Ability to demonstrate acceptable performance when provided certain steps or direction.

In this group of teachers relating to student vocational organizations most were being developed at a point midway between the adequate and capable level of performance. The task being performed at the highest level of the group was that of developing a program of work for the organization.

Lower performance levels of development in this group of tasks were those concerned with keeping the community informed about program activities.

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Lower performance levels of development in this group of tasks were those concerned with keeping the community informed about program activities.

Evidences collected for this group of tasks yielded the following implications:

1. Increased experiences should be provided in pre-service teacher education programs for participants to work under supervision in "actual" schools and in the community. Indications are that increased experiences are needed in working with people (students, adults, and other school personnel).

2. Increased experiences should be provided in the diagnosis of individual student learning patterns and selection of proper teaching methods/techniques to increase student achievement. Implications are that closer supervision needs to be provided in these areas as beginning teachers enter their first years of employment.

3. Additional experiences should be provided in teacher training in the area of student supervision and guidance with special emphasis being placed on clouding the concept of "correct" disciplinary actions for student behavior.

Additional experiences should be provided through the use of in-service workshops and keeping the community informed about the vocational agriculture programs. Teachers and supervisors should be involved in meetings and activities with other teachers and supervisors and other professionals involved in the development of the programs.

Only one group of performance was being performed below the adequate level. These were the teachers who were not involved in selecting training stations, and establishing policies and procedures. These were being performed at a low level of completion of pre-service programs.

The performance levels of tasks relating to the research were divided in the site specific groups according to their relationship. The task group assessed as ranked according to highest performance levels were:

(1) Public and Human Relations; (2) Planning of Instructional and Guidance; (3) Evaluation of Instruction and Guidance; (4) Program and/or Course Management.

The implications yielded the following findings:

In general, no significant difference was found between the mean ratings of beginning teachers and the mean ratings of other educators (administrators, etc.). The results indicated that beginning teachers included in the study were approximately equal in evaluating their performance levels.
SUMMER PROGRAMS

Herbert Schueman
Assistant Professor
Sam Houston State University

How do you think students and teachers feel about the summer program? How does the summer program contribute to more harmonious relationships between teachers and their administrators? What guidelines should the teachers follow to ensure the success of the summer program? How can the teacher convince the principal that the program will be a success?

SUMMER PROGRAMS

BOOK REVIEWS


The author, a member of the Department of Agricultural Engineering at Cornell University, defines agriculture as "the science that deals with the art of producing and processing food, fiber, and fuel for human needs from land, water, and air resources."

The content of the book covers the relationships among the various factors which the author is studying. He has provided a comprehensive guide for those interested in the field of agricultural waste management.

The price of the book is affordable and it is a valuable addition to any library interested in the agricultural field.


The contents of the book cover the history of dairy cattle, from the very early records to the present day. It provides information on the different breeds of dairy cattle, their characteristics, and their uses.

The author also provides information on the management of dairy cattle, including feeding, housing, and health care.

The price of the book is reasonable and it is a valuable resource for those interested in the dairy cattle industry.
Stories in Pictures

by Jospar S. Lee

Using Resources in a School Laboratory—Students enrolled at Miami (Fla.) High School are shown receiving practical experience in handling hogs. (Photo from H. Quinlan Duff, Miami Agricultural School)

Using Resources of Business—Agriculture students at Lake (Missouri) High School observe Mr. Linda Jean, director of the Piggly Wiggly store, as she demonstrates the retailing procedure used with records by View-Master. (Photo from James A. Bailey, Missouri State Department of Education)

Using Resources of Higher Education—Universities and colleges are helping Agricultural Education. Here, personnel of the Animal Science Department, University of Georgia, assist in setting up and conducting the State FFA Meat Judging Contest. (Photo from Georgia State Department of Education)

Using National Support—Ray Tomlinson of Meach and Company, Inc., is shown presenting a check for $10,000 to Alpha Sigma Nu, National FFA President. The presentation of the check was made to support the development and distribution of a new "FFA Advisor's Handbook." (Photo from Vanis Laffitte, Auburn University, Dean Tromblon, North Dakota, and James P. Lane, Virginia Polytechnic Institute and State University.) (Photo from Don Renner, National FFA Center)

Using Local Dealer Equipment—Students at North Star (Missouri) learn the attributes and operation of farm equipment. The equipment was available by the local implement dealers. (Photo from James A. Bailey, Missouri State Department of Education)

Theme—Informing THE PUBLIC